FIG. 1-1-A

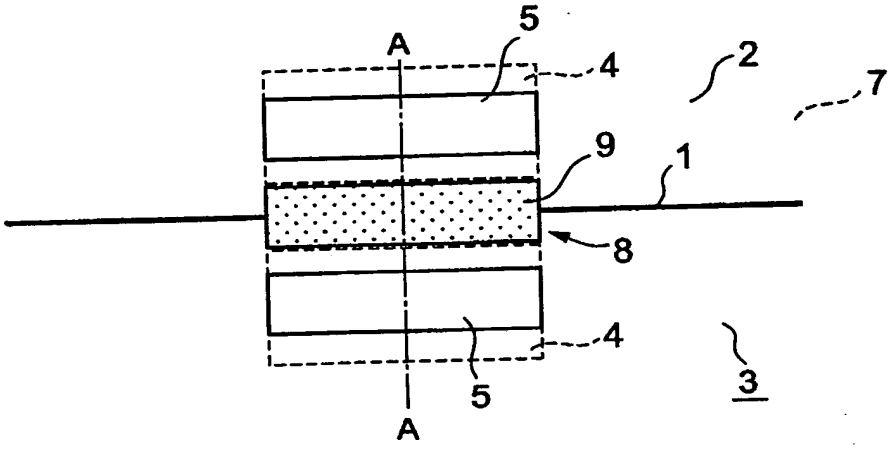
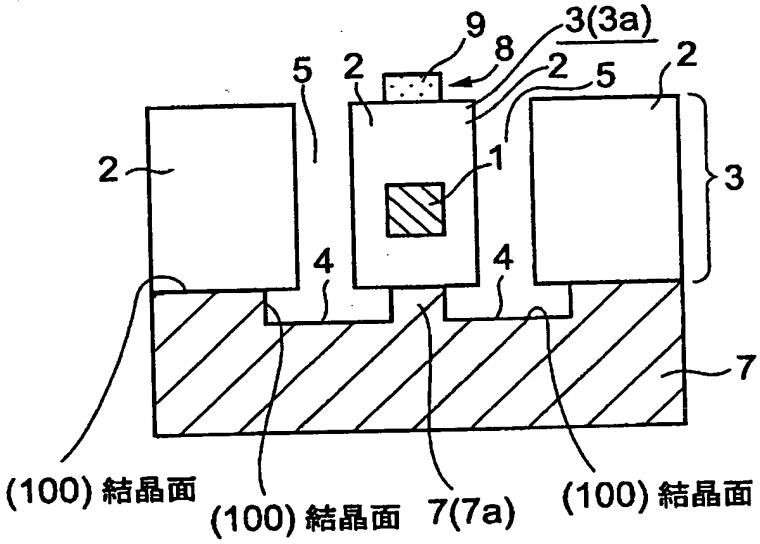


FIG. 1-1-B



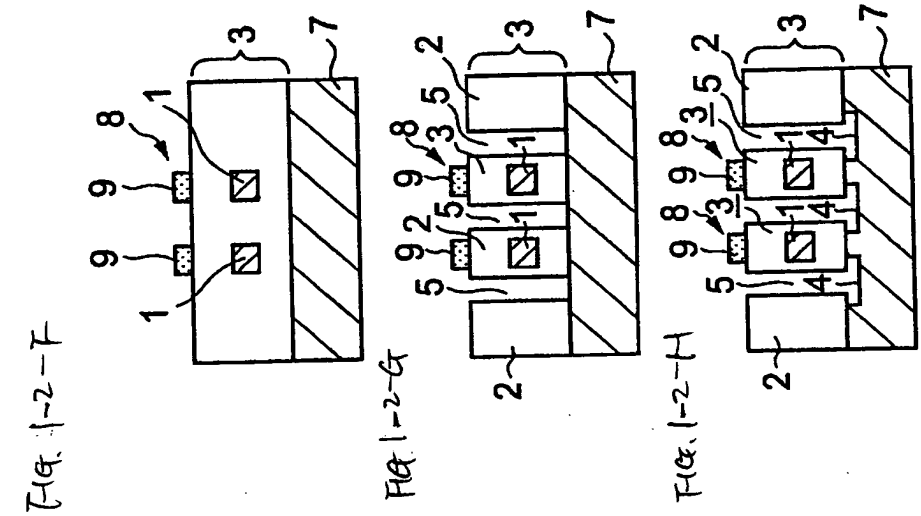


FIG. 1-2-F
FIG. 1-2-G
FIG. 1-2-H

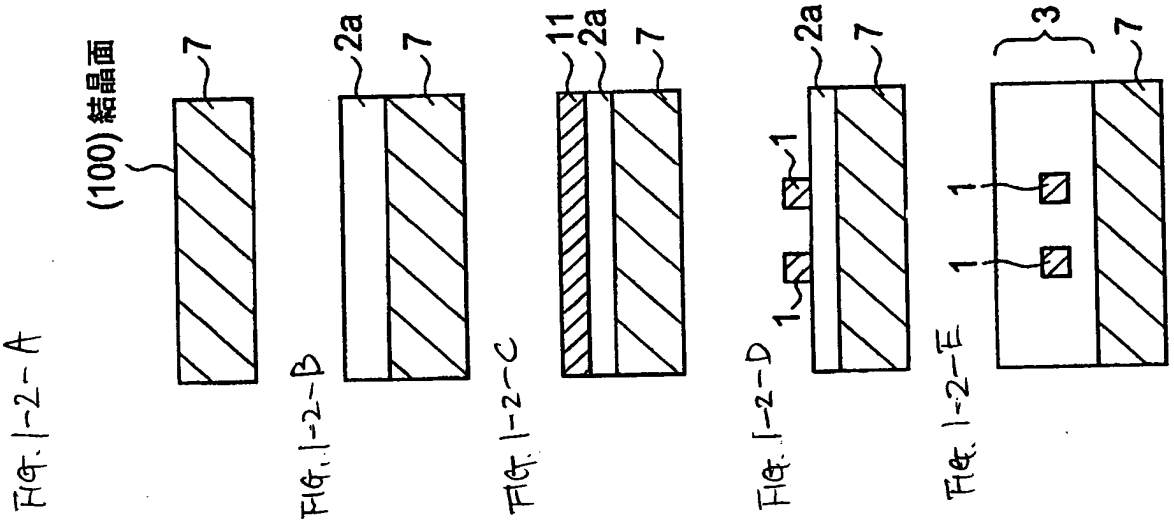


FIG. 1-2-A
(100) 結晶面
FIG. 1-2-B
FIG. 1-2-C
FIG. 1-2-D
FIG. 1-2-E

Fig. 1-3-A

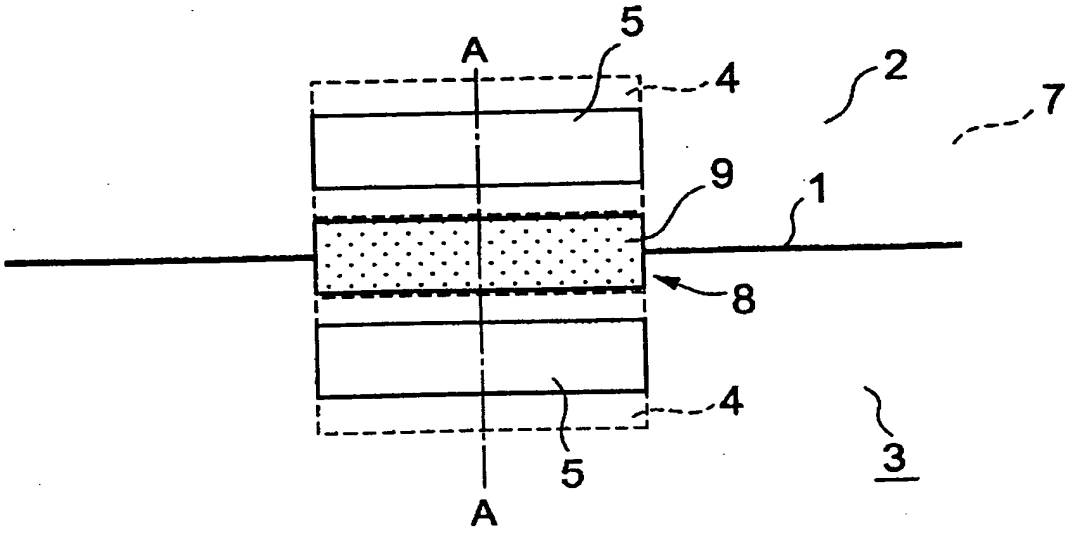


Fig. 1-3-B

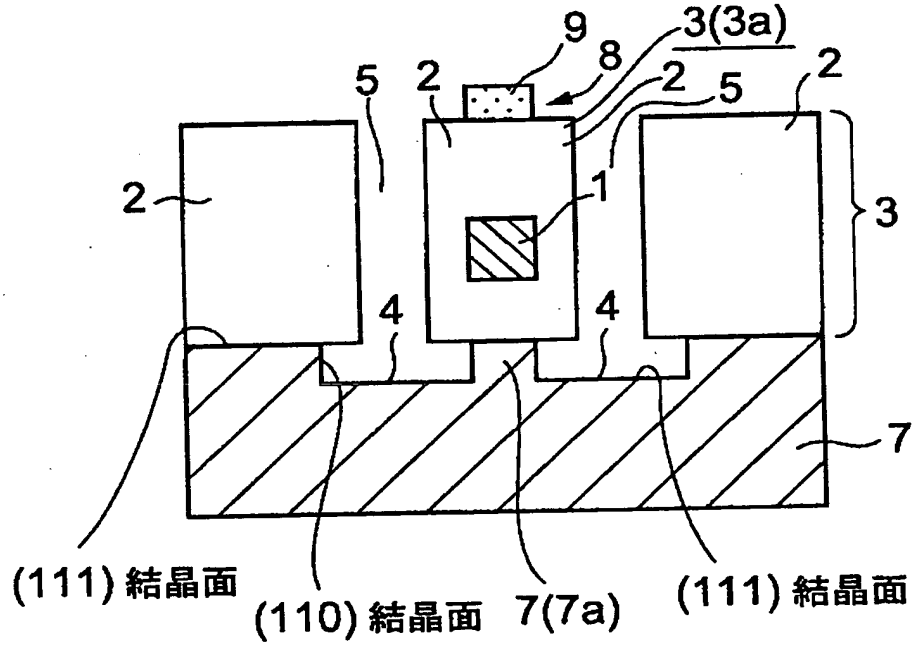


FIG. 1-4-A

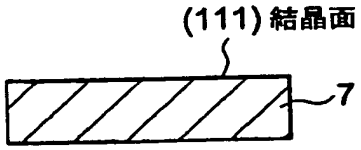


FIG. 1-4-B

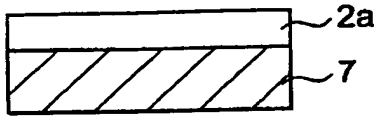


FIG. 1-4-C

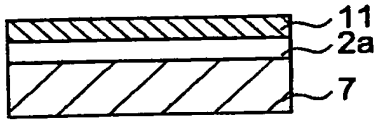


FIG. 1-4-D

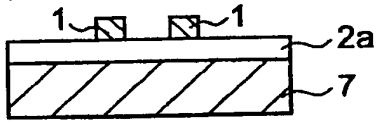


FIG. 1-4-E

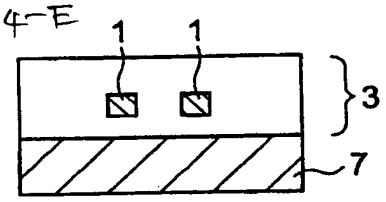


FIG. 1-4-F

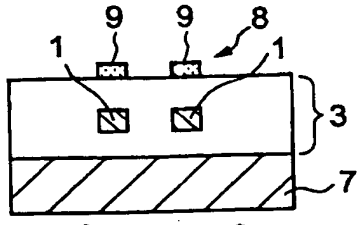


FIG. 1-4-G

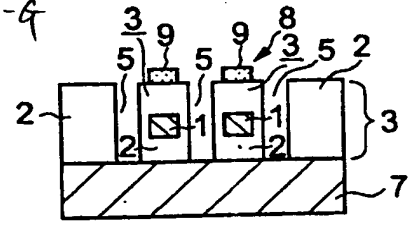


FIG. 1-4-H

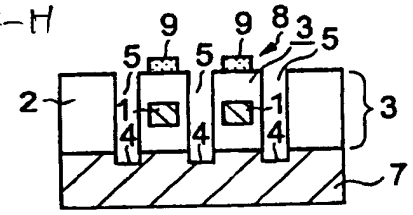


FIG. 1-4-I

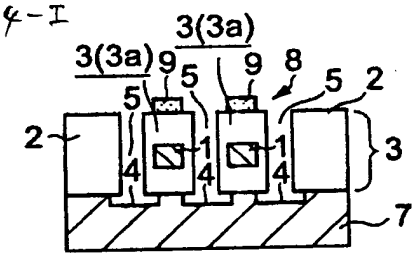


FIG. 1-5-A

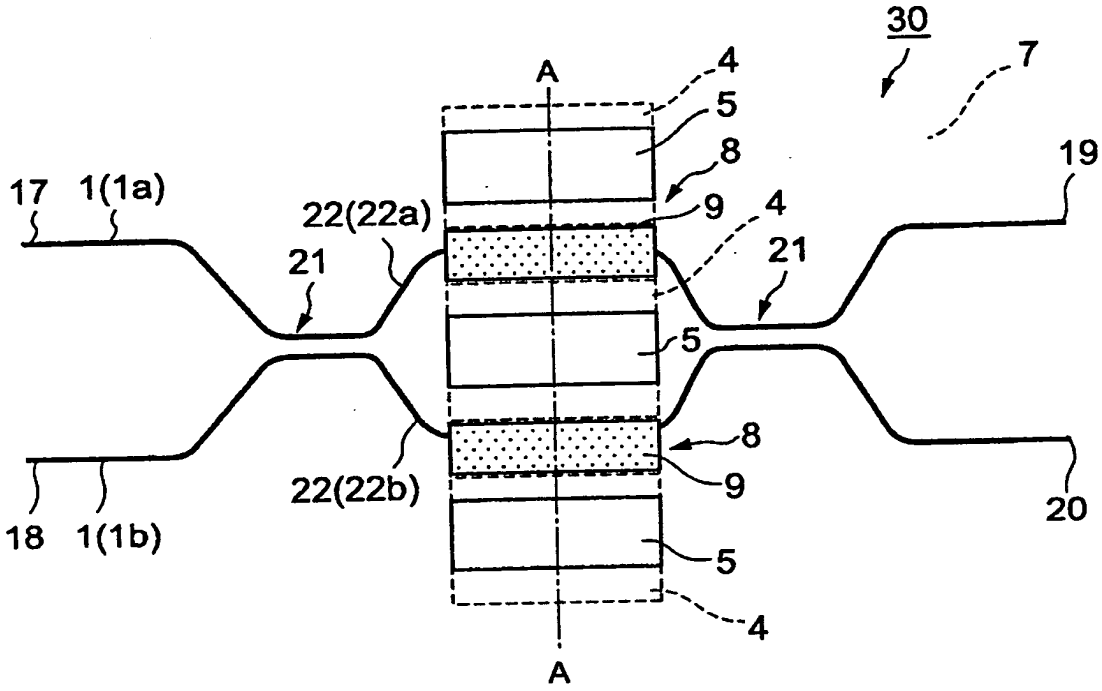


FIG. 1-5-B

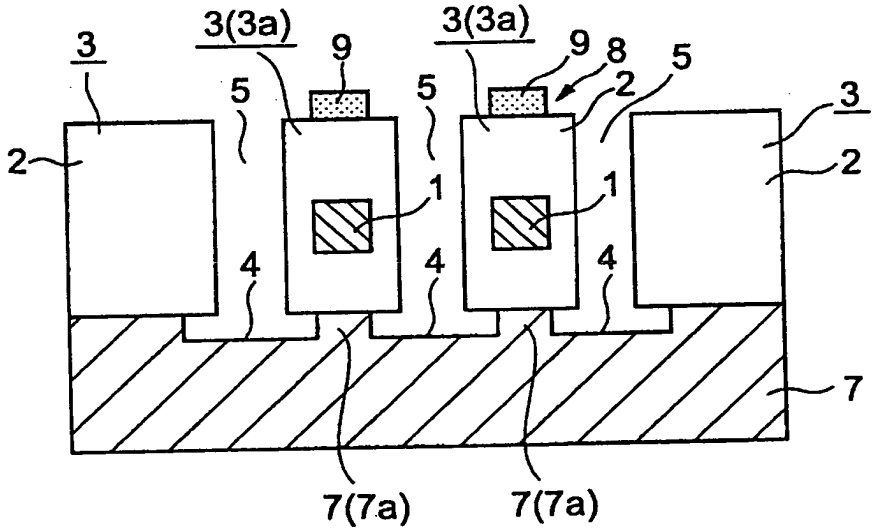


Fig. 1-6-A

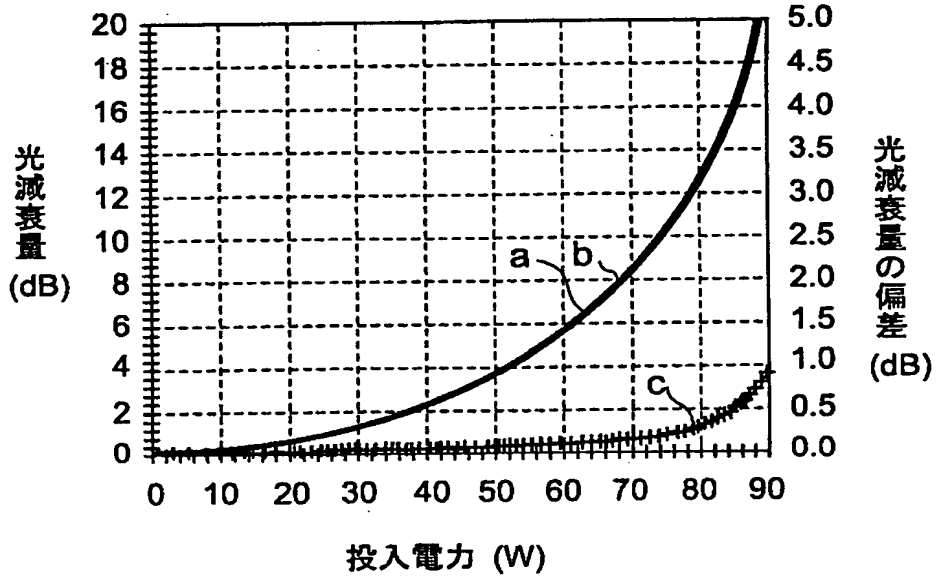


Fig. 1-6-B

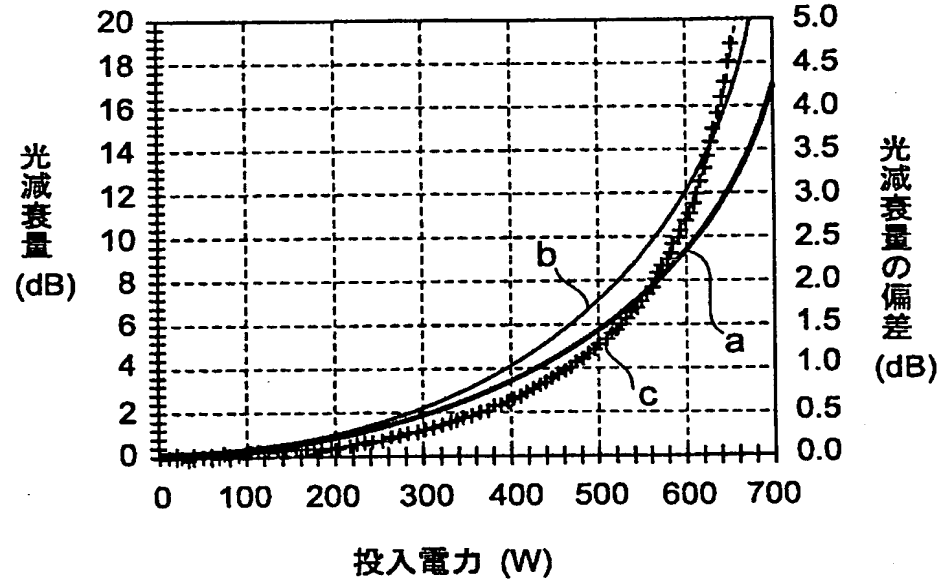


FIG. 1-7

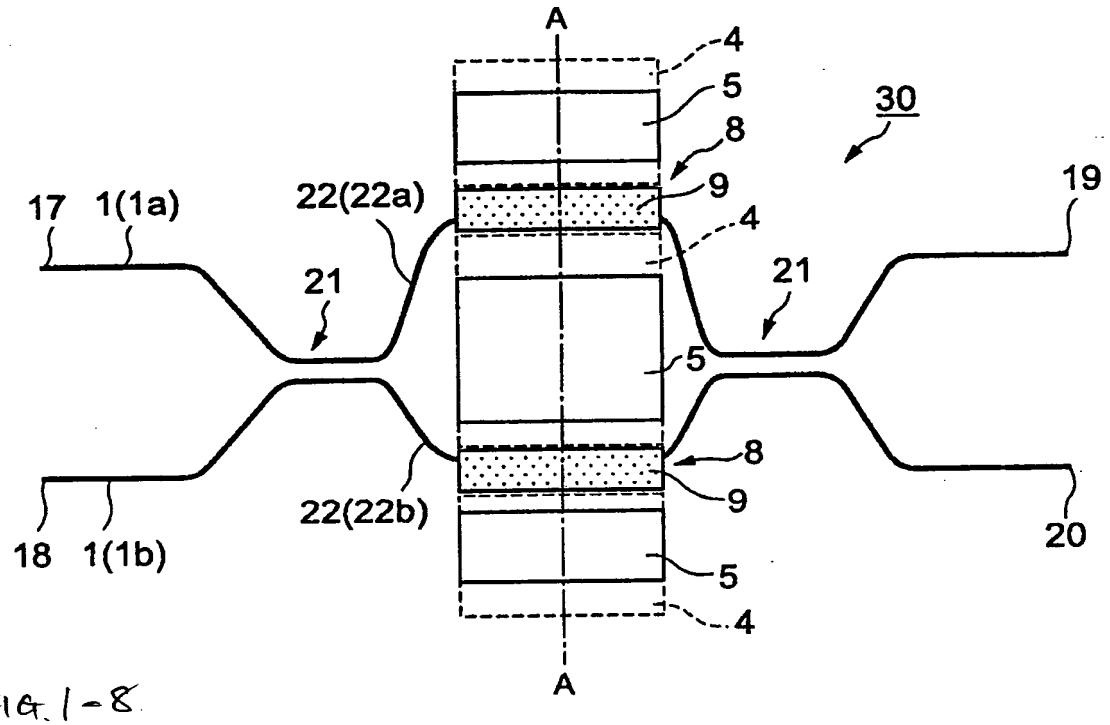

A
4
5
8
9
4
30
19
17
1(1a)
22(22a)
21
21
5
8
9
22(22b)
18
1(1b)
20
5
4
A

FIG. 1-8

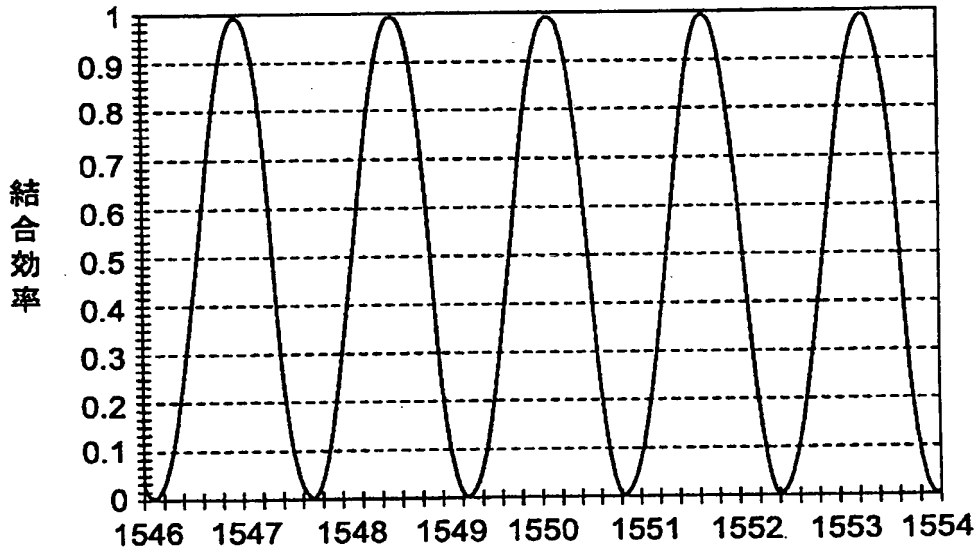

結合効率
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1546
1547
1548
1549
1550
1551
1552
1553
1554
波長 (nm)

FIG. 1-9

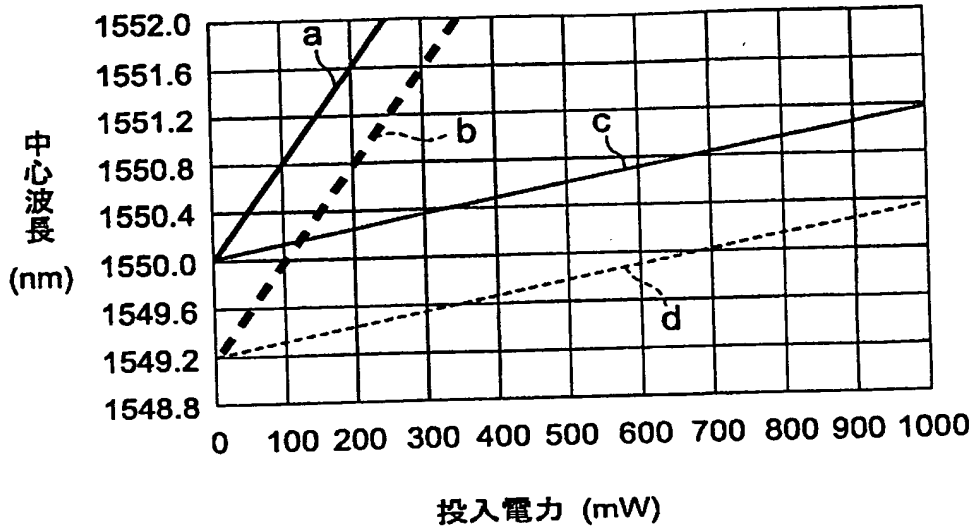


FIG. 1-10

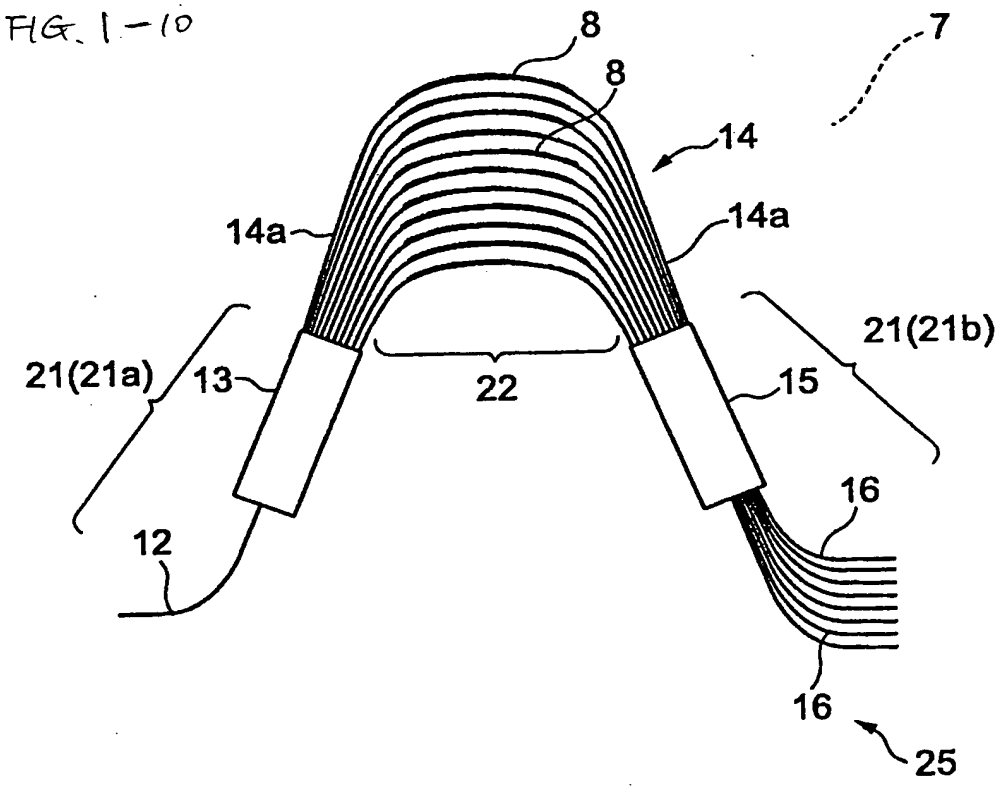


FIG. 1-11-A

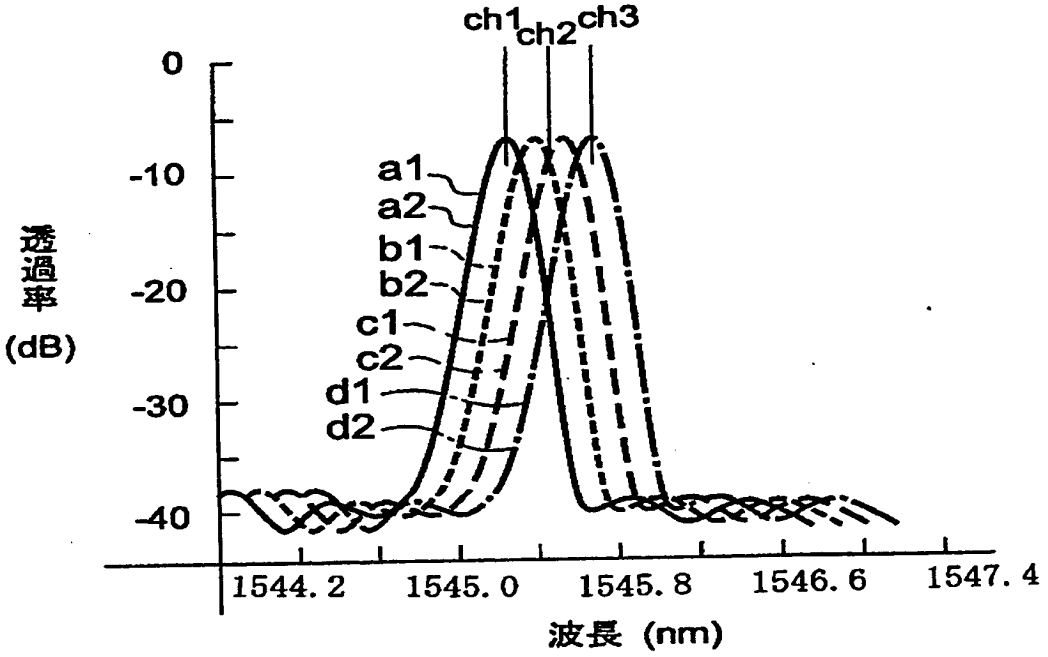


FIG. 1-11-B

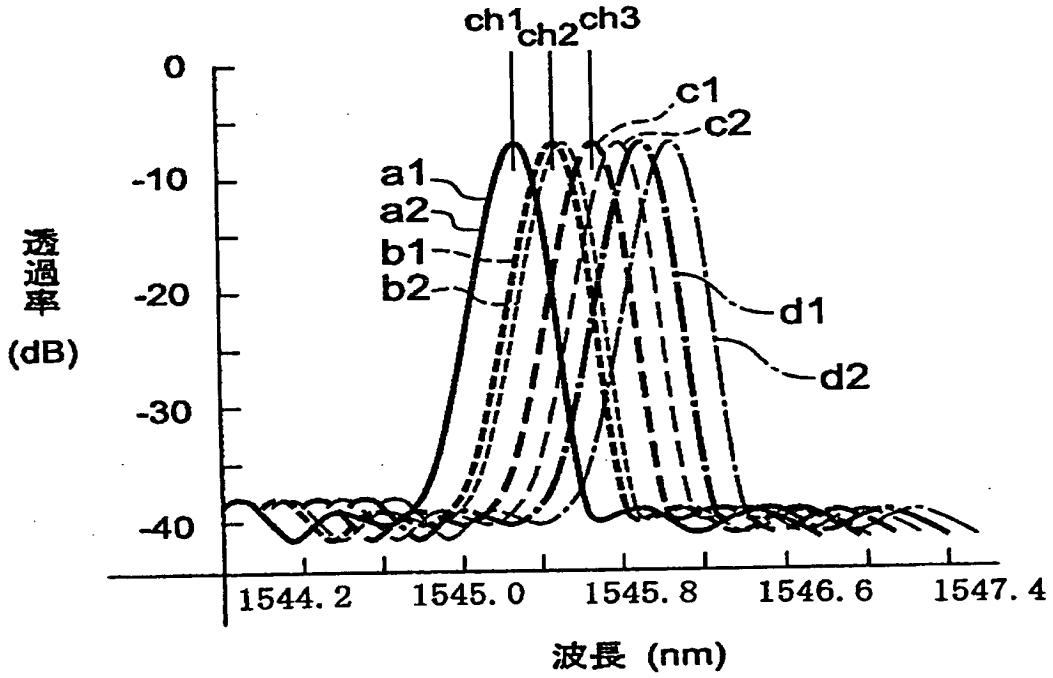
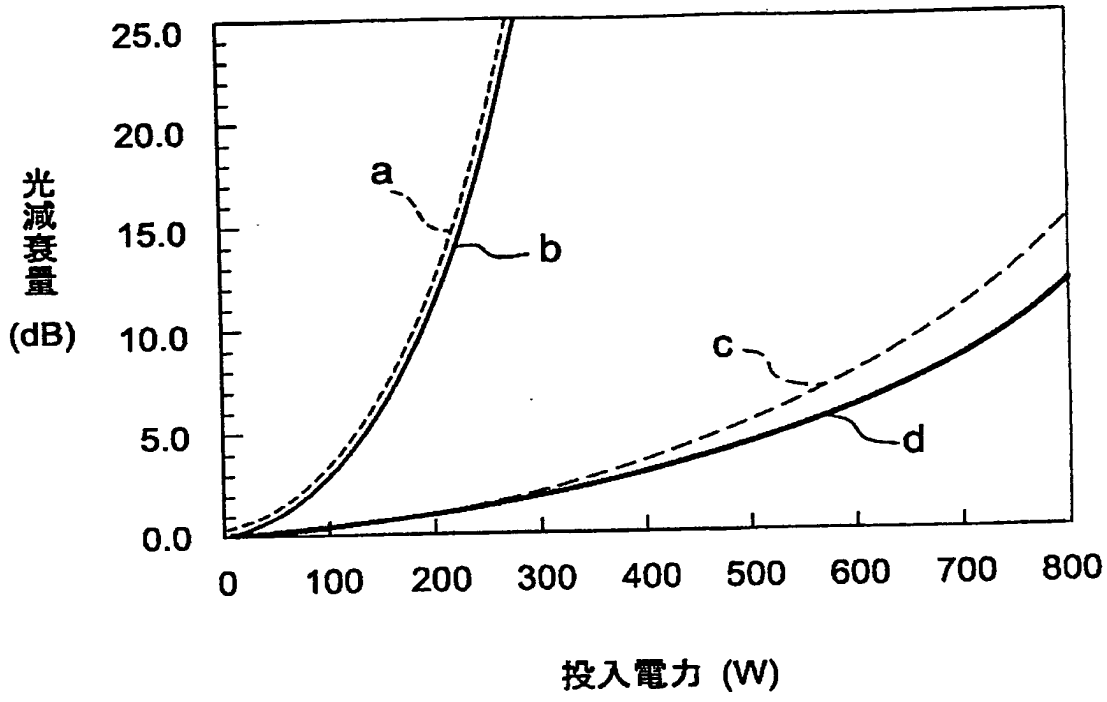


FIG. 1-12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20.0
15.0
10.0
5.0
0.0
光減衰量
(dB)
a
b
c
d
0
100
200
300
400
500
600
700
800
投入電力 (W)

FIG. 1-13

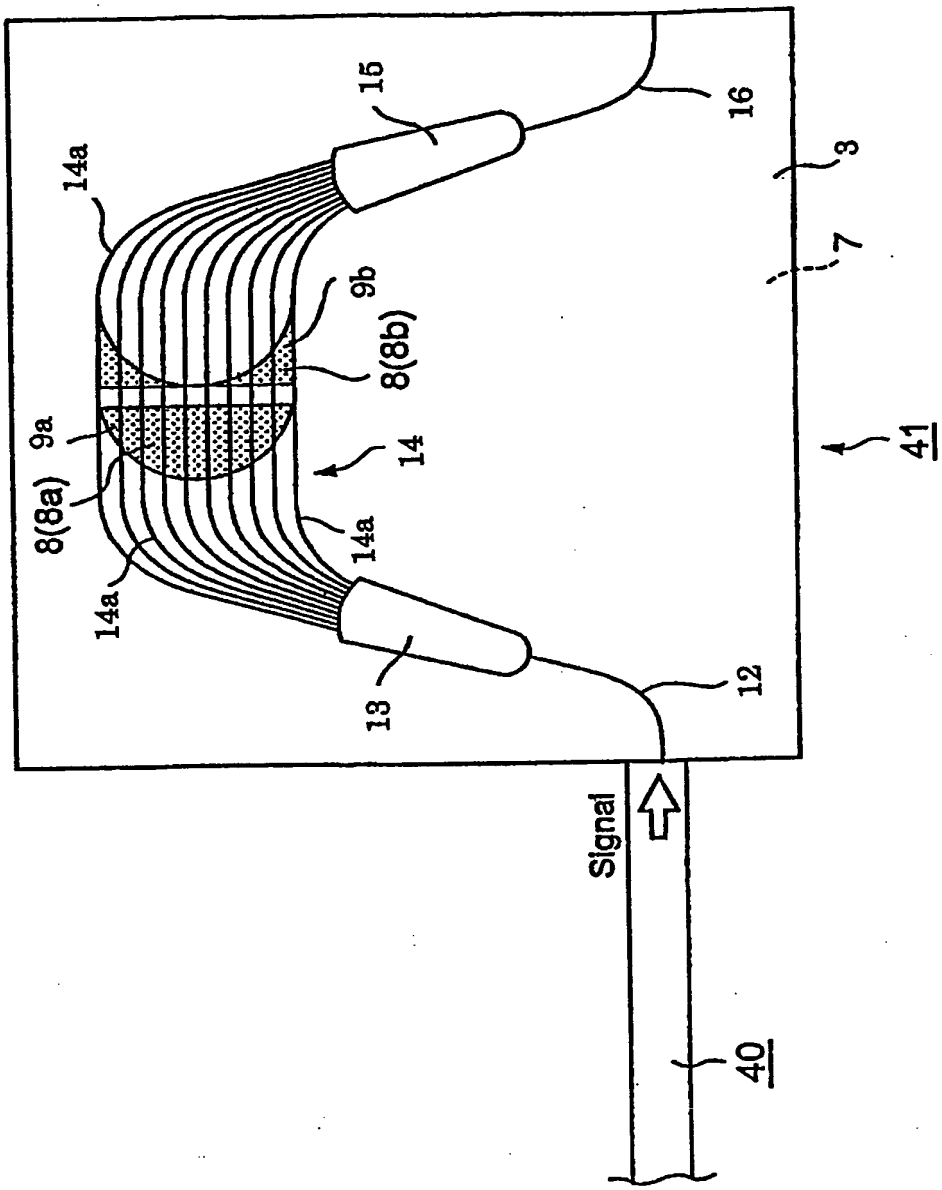


FIG. 1-14

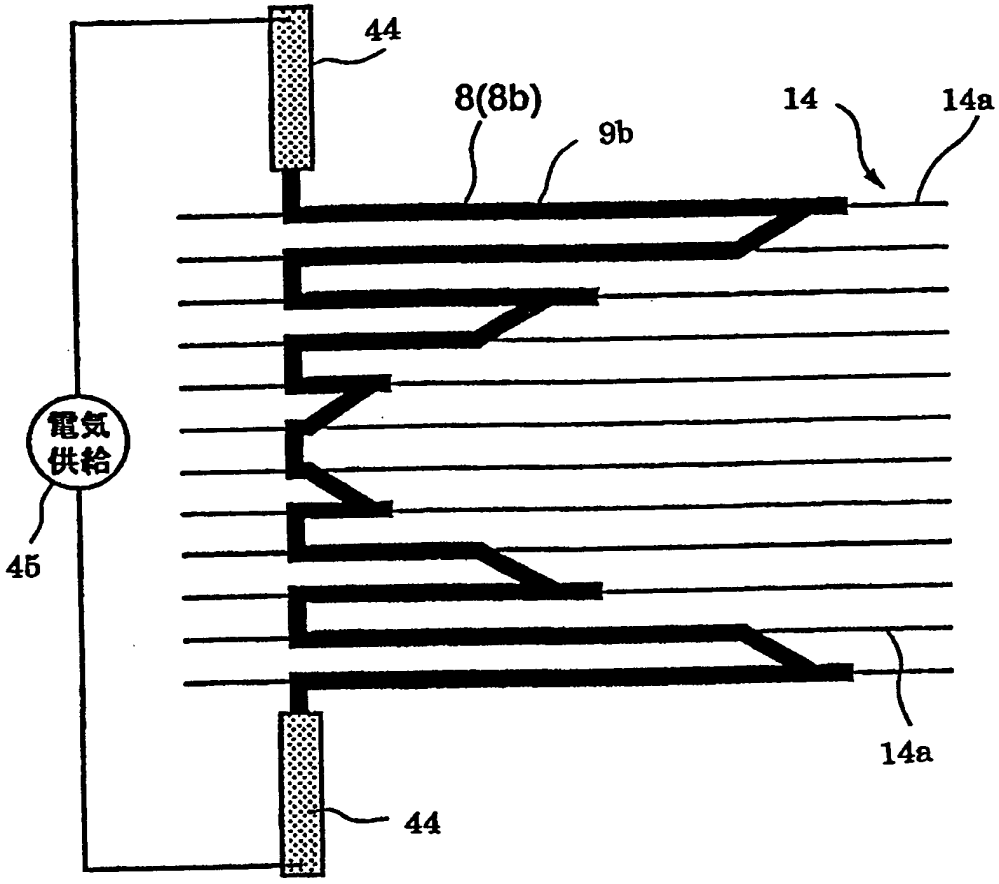


FIG. 1-15

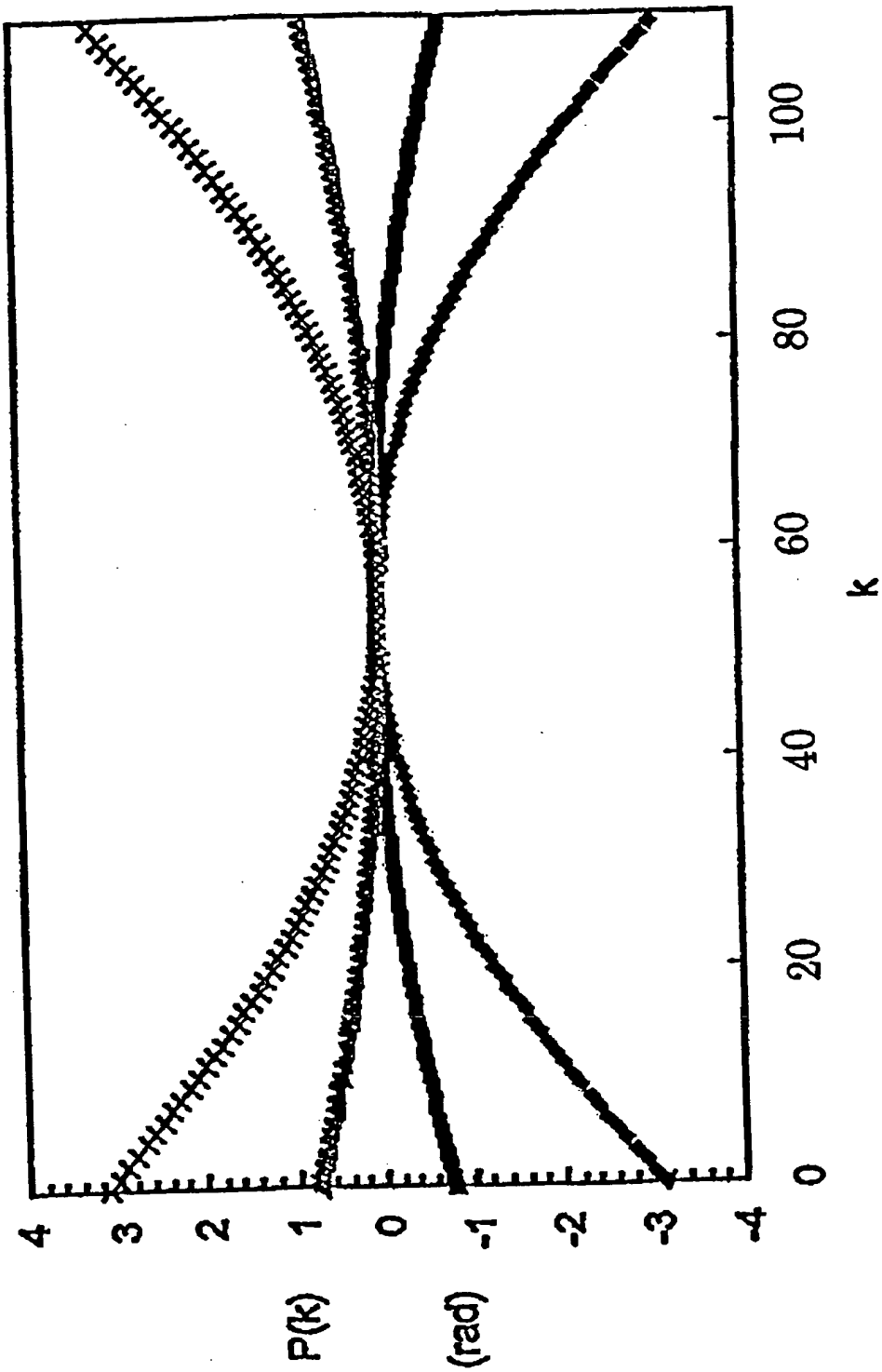


FIG. 1-16

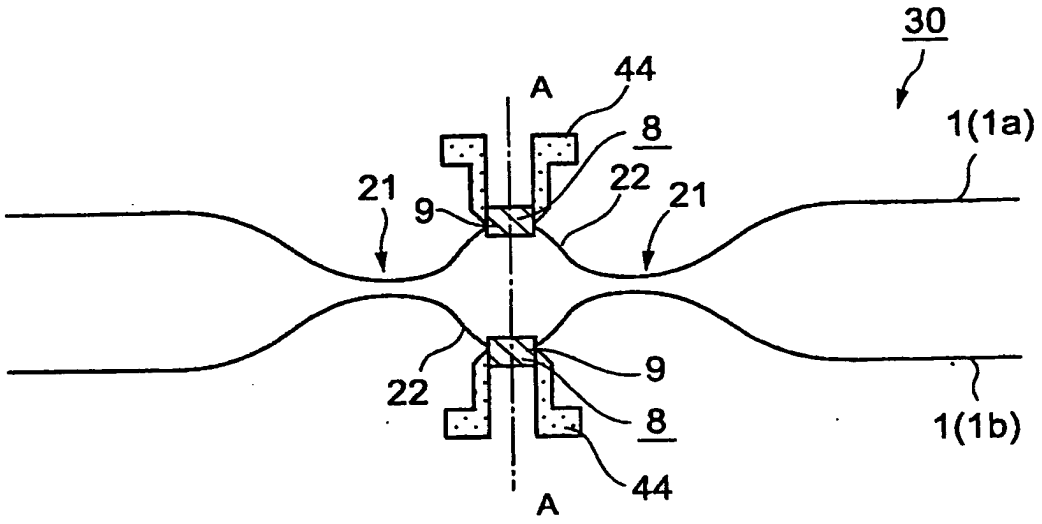


FIG. 1-17

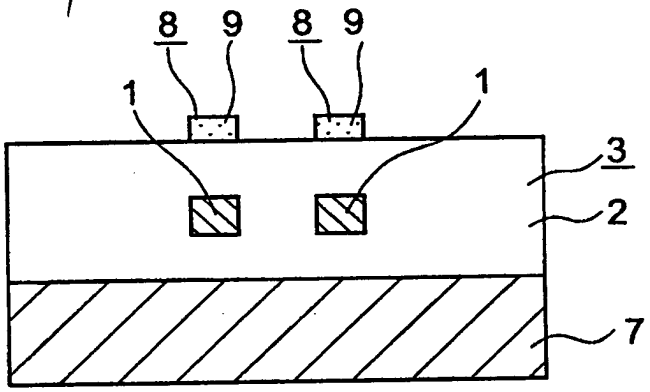


FIG. 1-18

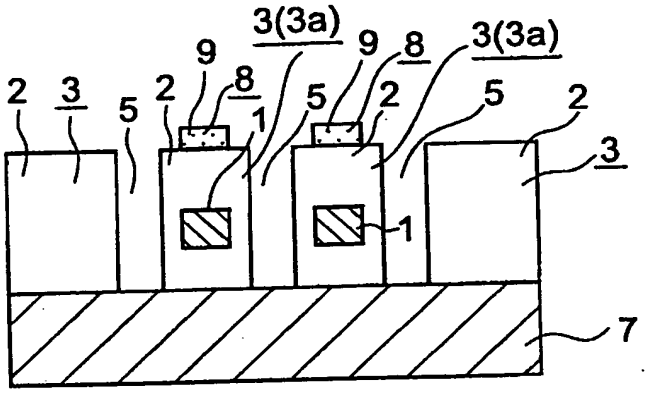


FIG. 1-19

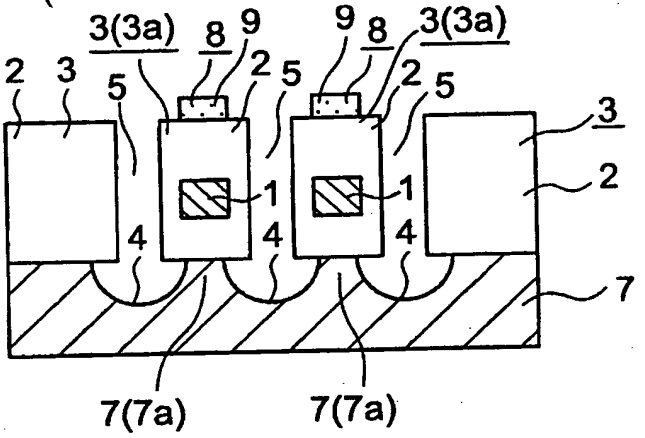


FIG. 1-20

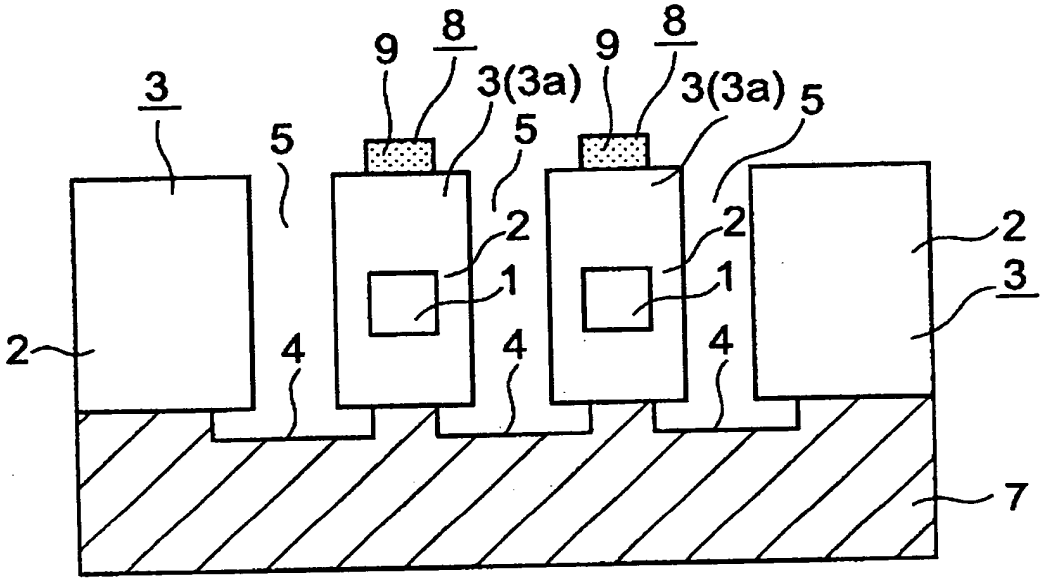
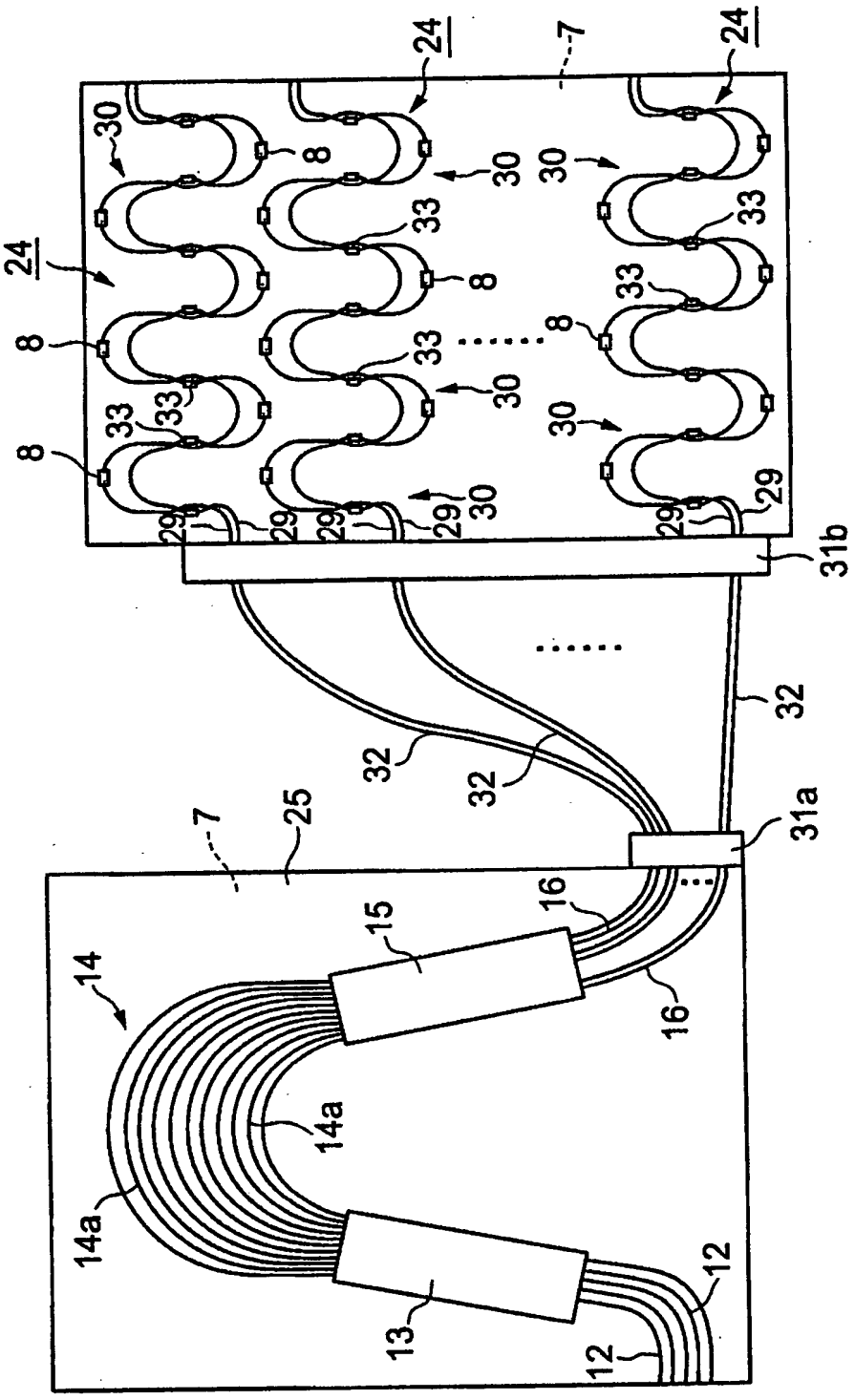


FIG. 1-21


24
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29
31b
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31a
16
15
14
16
14a
14a
12
13
12

Fig. 2-1-A

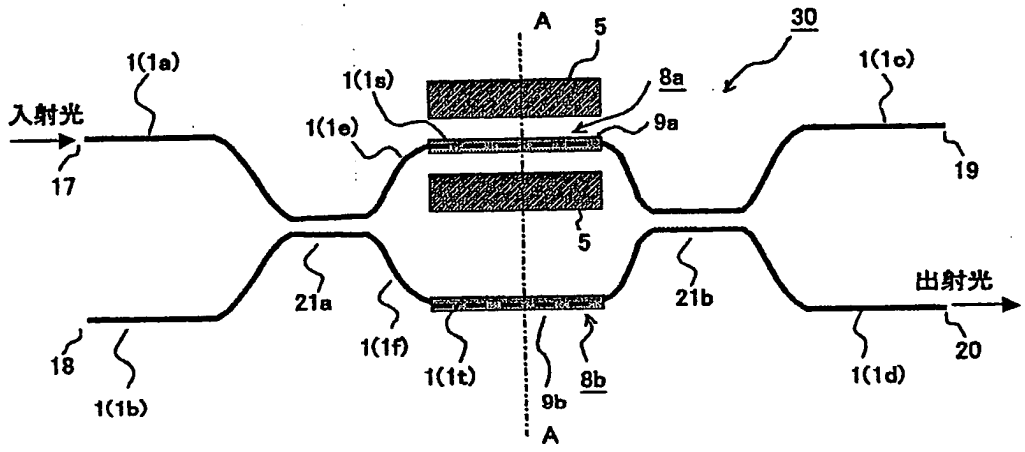

Fig. 2-1-B

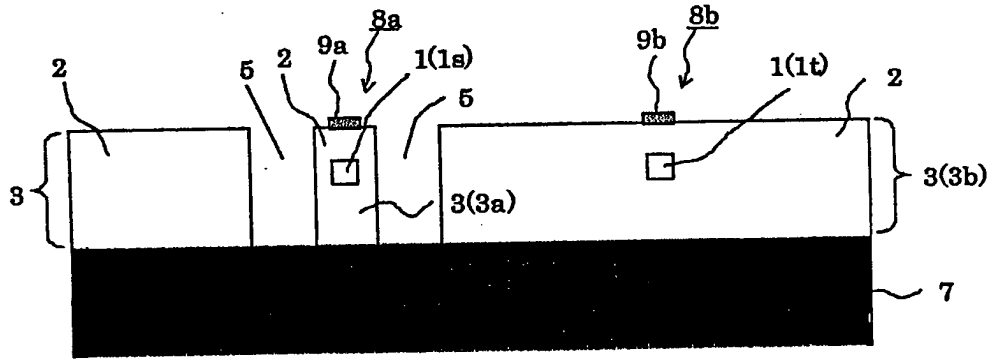

FIG. 2-2-A

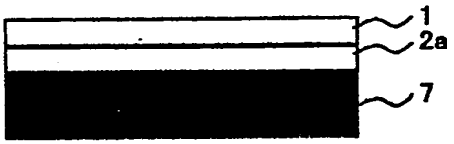

FIG. 2-2-B

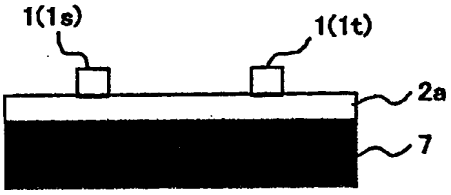

FIG. 2-2-C

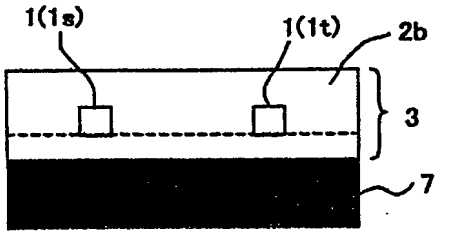

FIG. 2-2-D

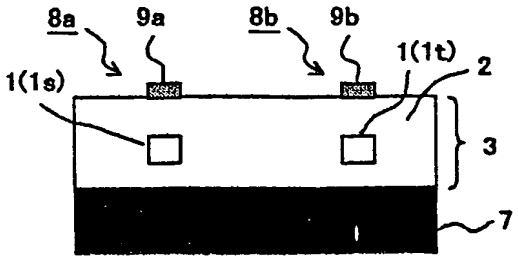

FIG. 2-2-E

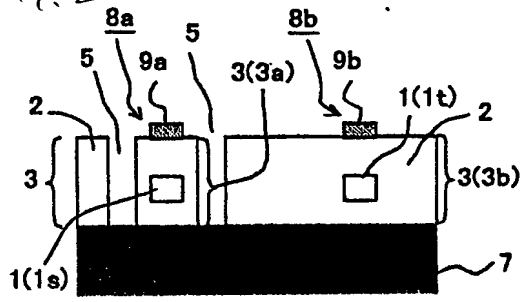

FIG. 2-3-A

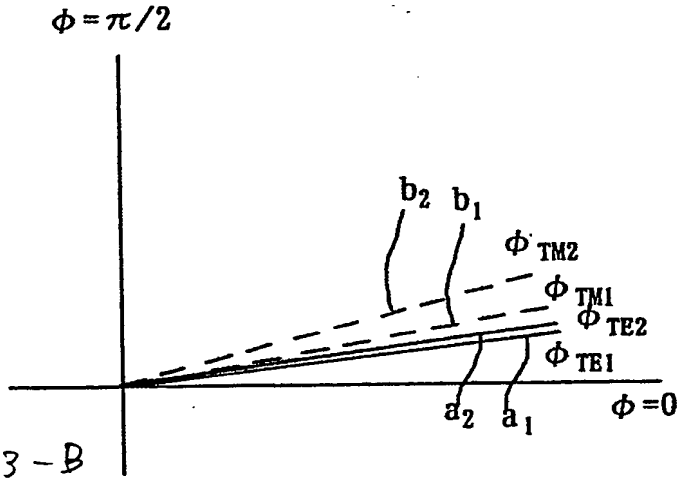

FIG. 2-3-B

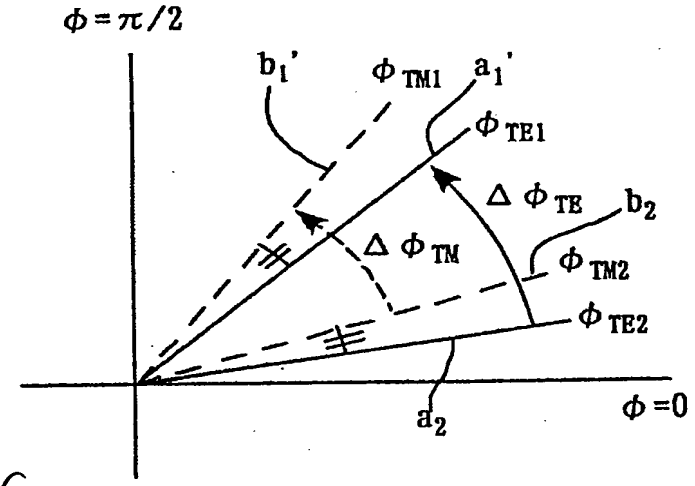

FIG. 2-3-C

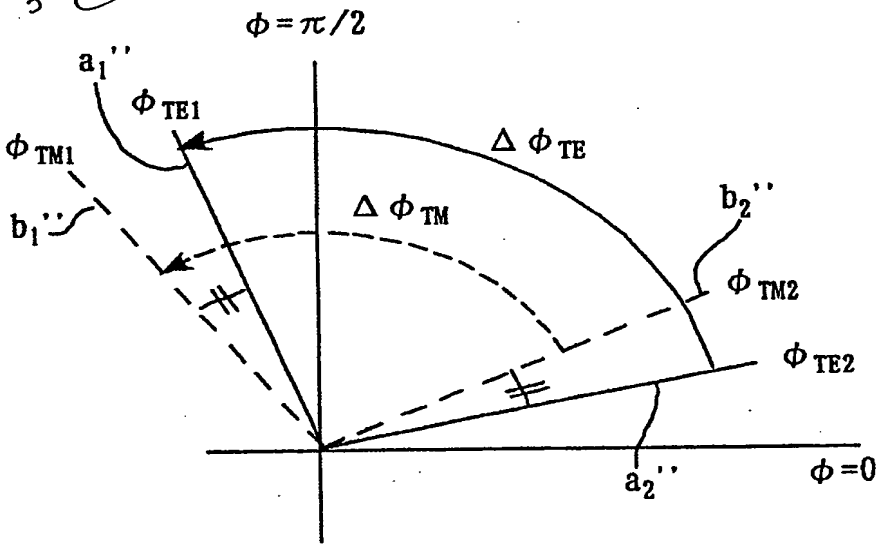

FIG. 2-4-A

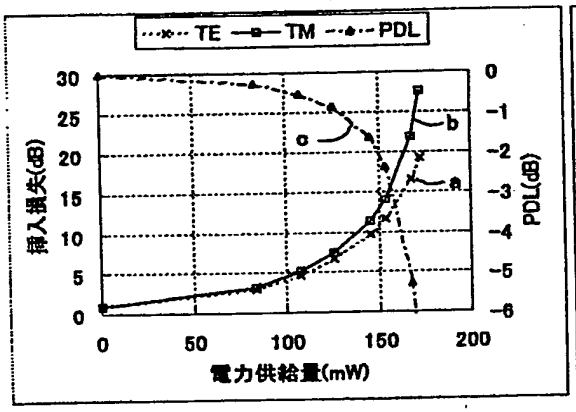

FIG. 2-4-B

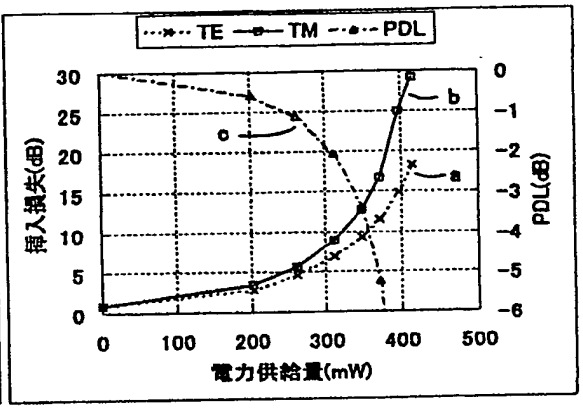

FIG. 2-5-A

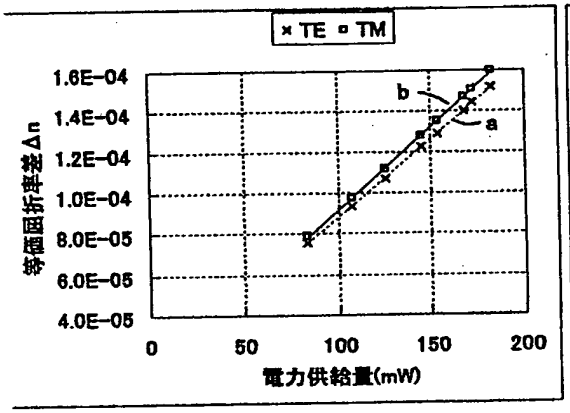

FIG. 2-5-B

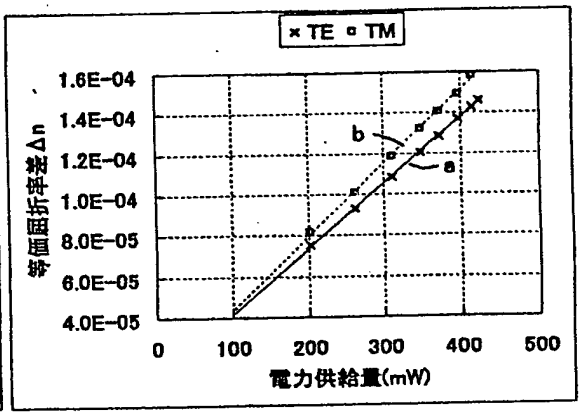

Fig. 2-6

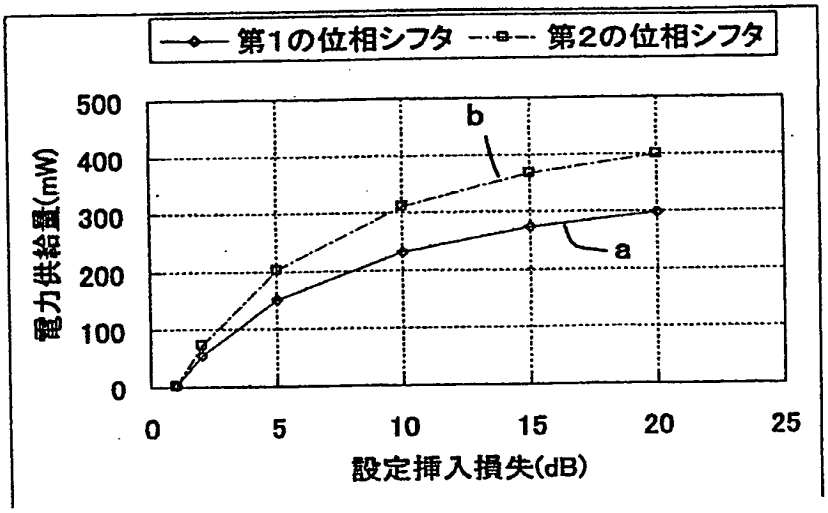
第1の位相シフタ
第2の位相シフタ
電力供給量(mW)
500
400
300
200
100
0
0
5
10
15
20
25
設定挿入損失(dB)
a
b

Fig. 2-7

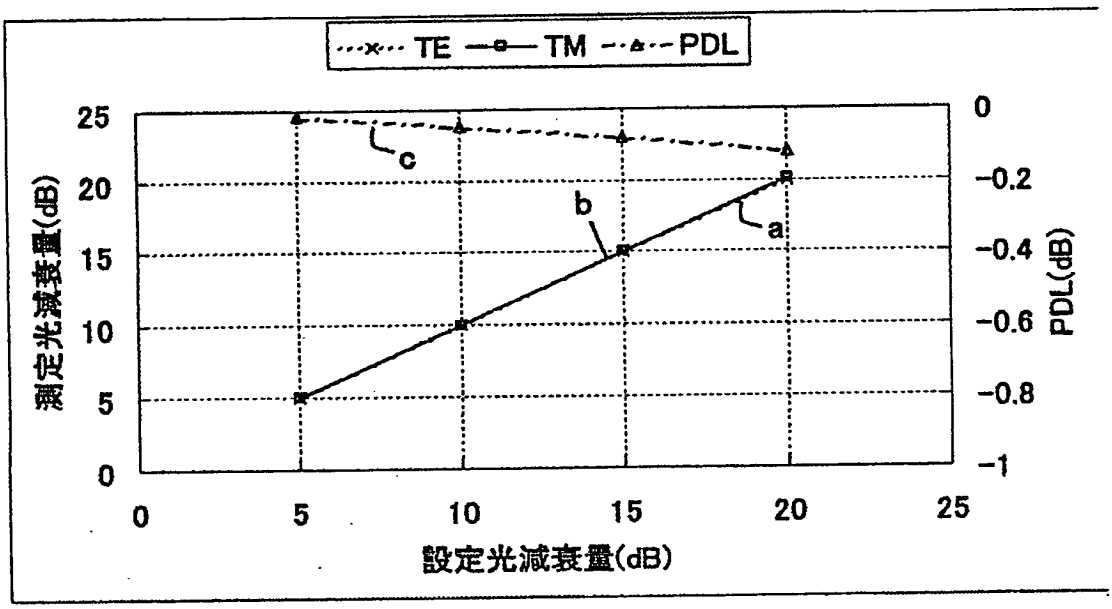
TE
TM
PDL
測定光減衰量(dB)
25
20
15
10
5
0
0
5
10
15
20
25
設定光減衰量(dB)
0
-0.2
-0.4
-0.6
-0.8
-1
PDL(dB)
a
b
c

FIG. 2-8-A

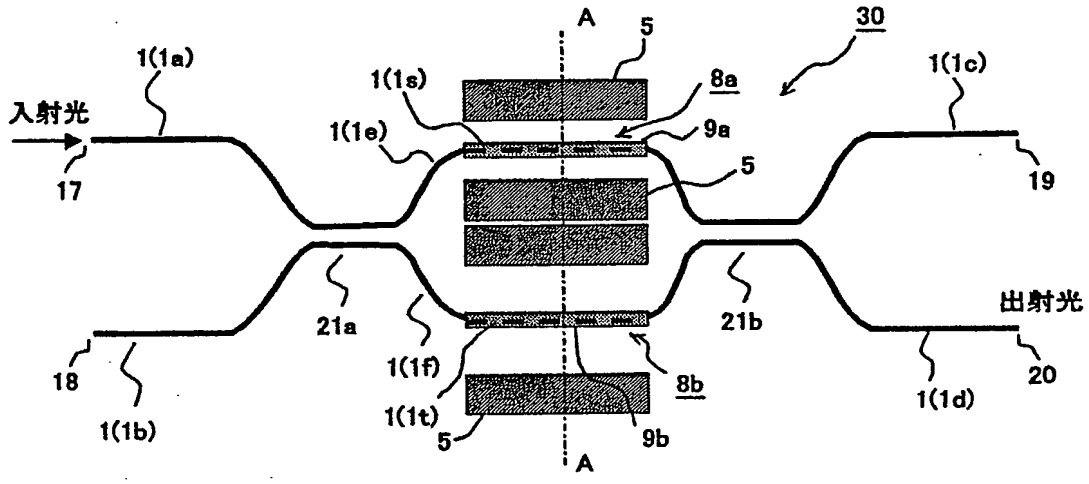

FIG. 2-8-B

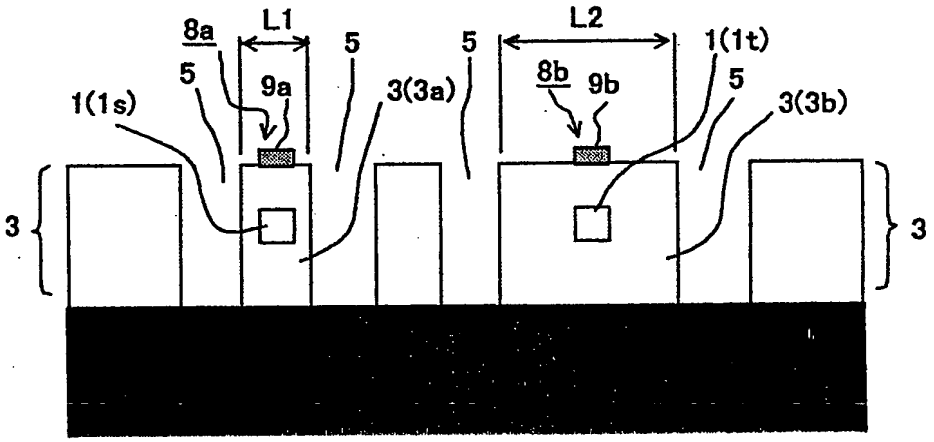

FIG. 2-9-A

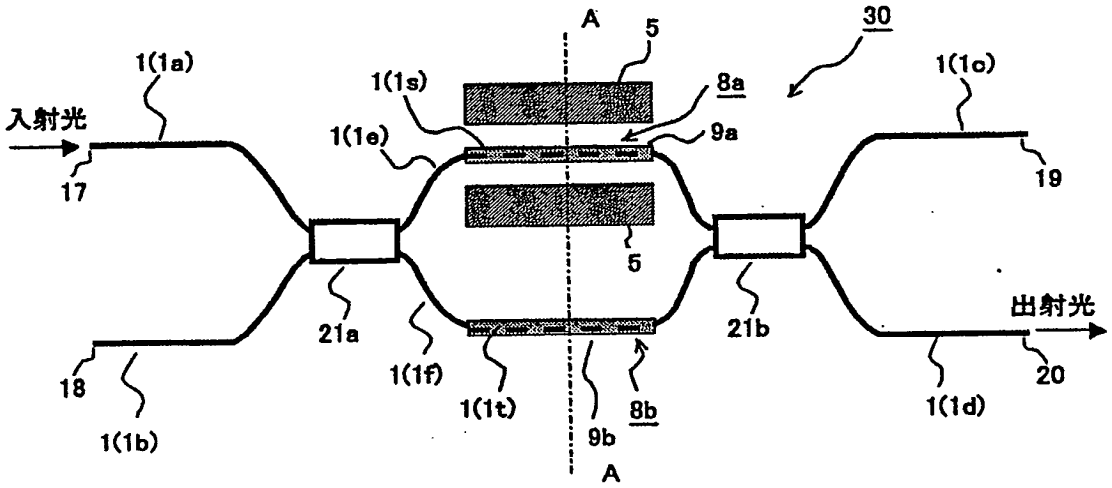

FIG. 2-9-B

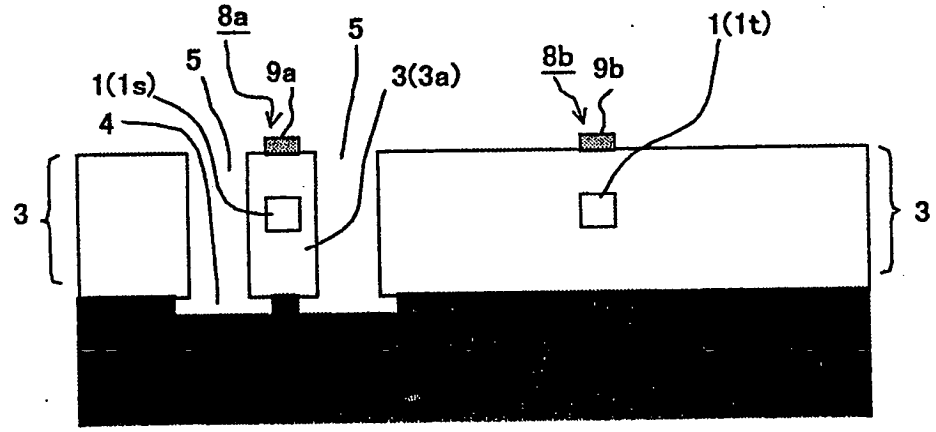

FIG. 2-10-A

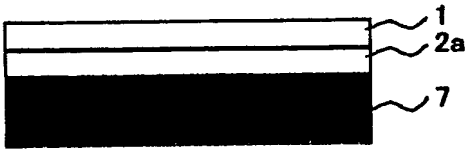

FIG. 2-10-B

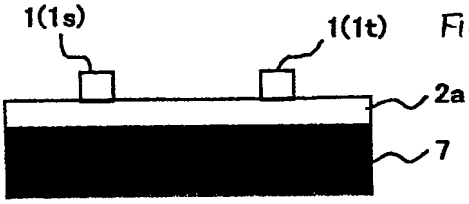

FIG. 2-10-C

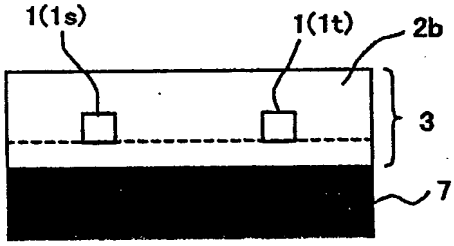

FIG. 2-10-D

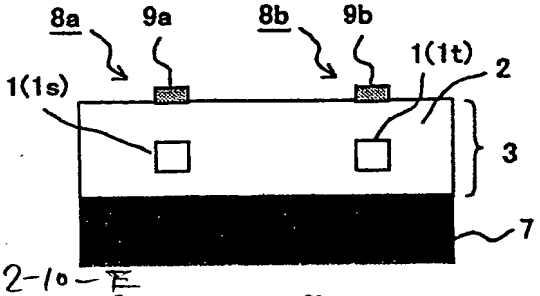

FIG. 2-10-E

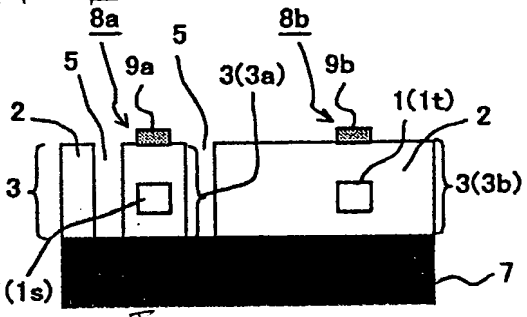

FIG. 2-10-F

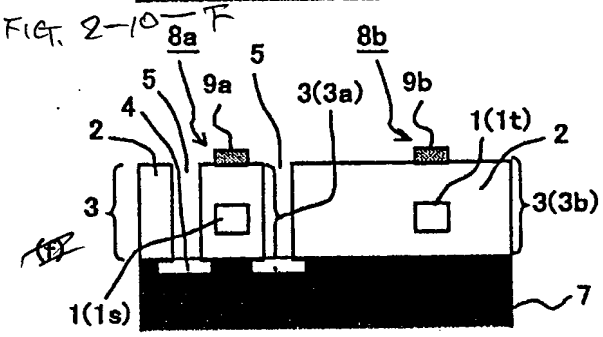

FIG. 2-11-A

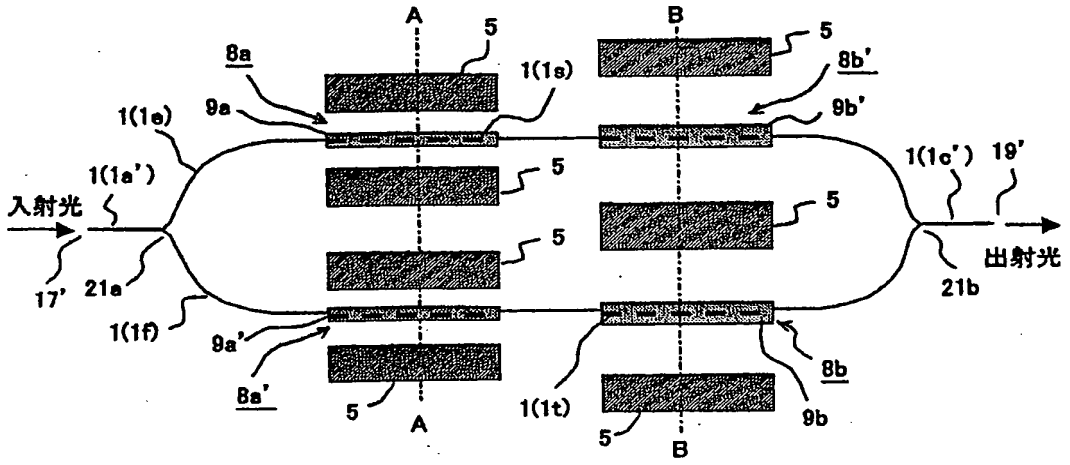

FIG. 2-11-B

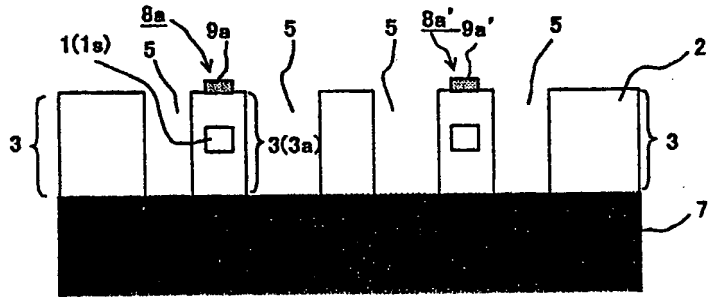

FIG. 2-11-C

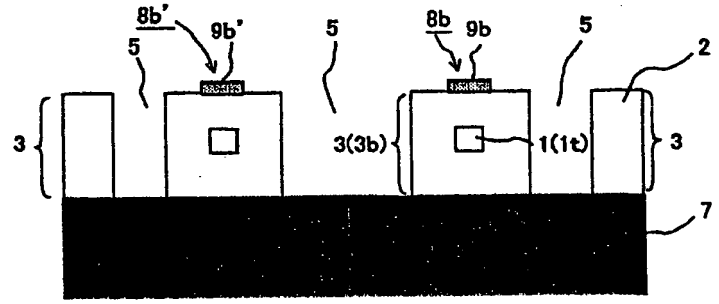

FIG. 2-12-A

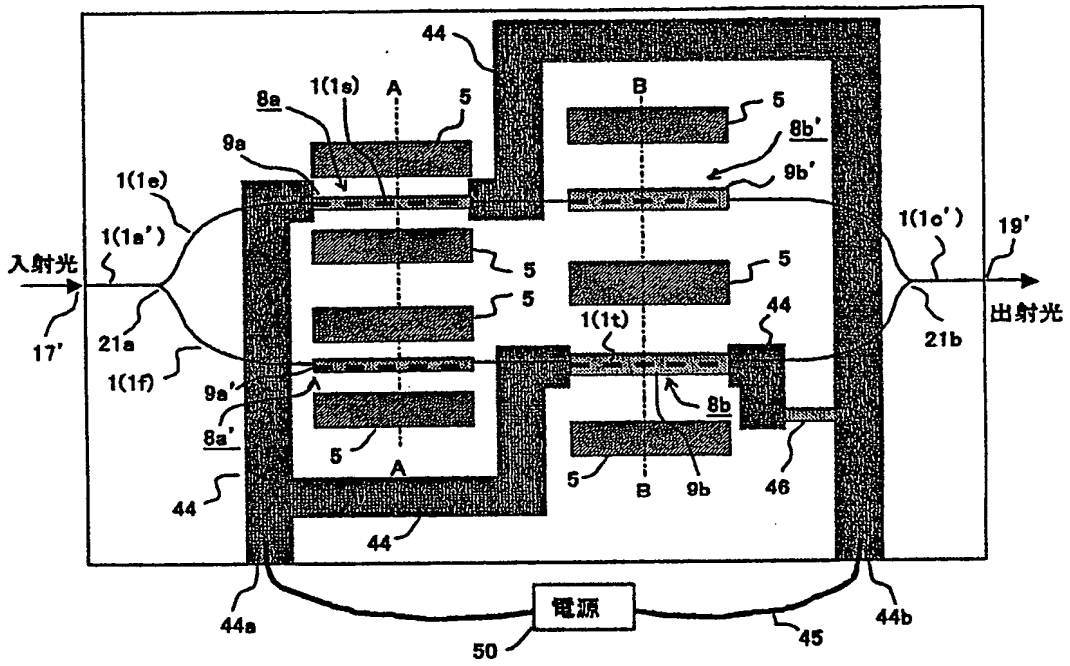

FIG. 2-12-B

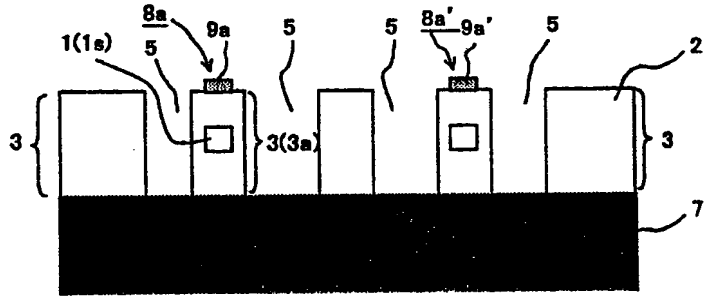

FIG. 2-12-C

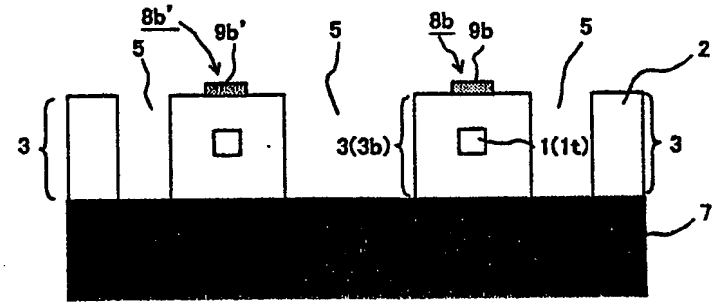

FIG. 2-13-A

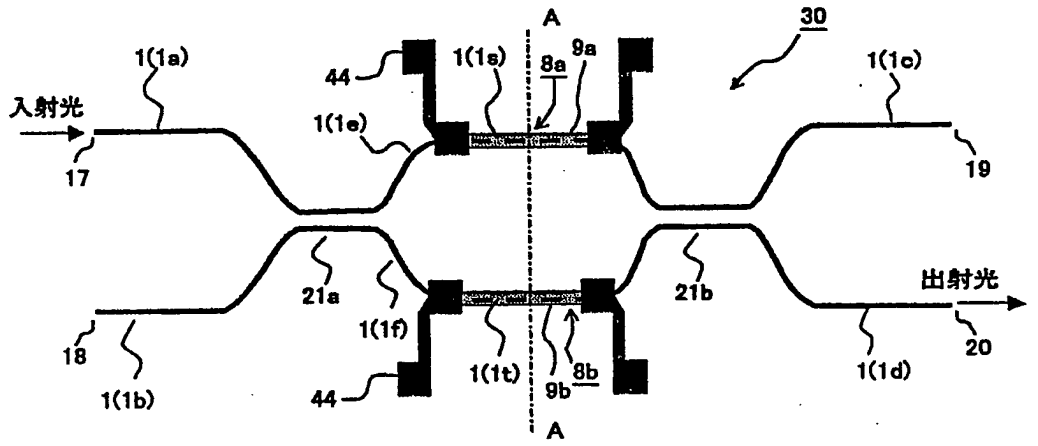

FIG. 2-13-B

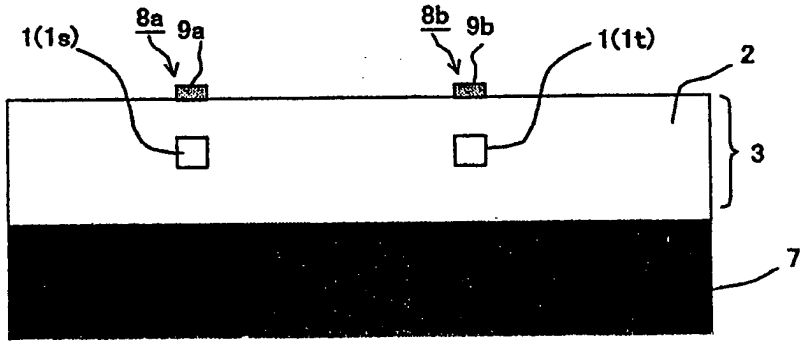

FIG. 2-14-A

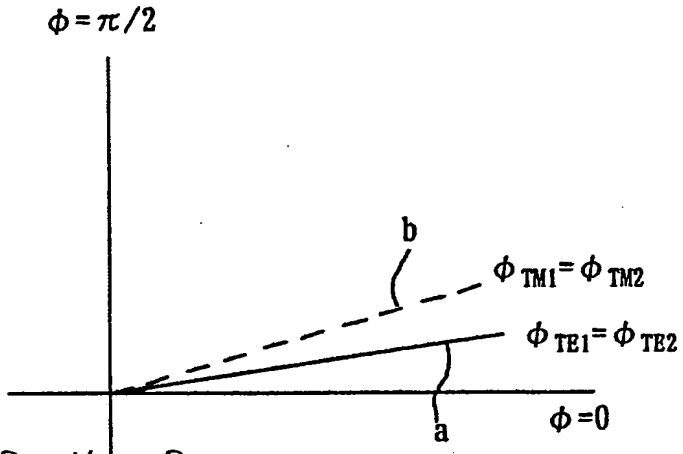

FIG. 2-14-B

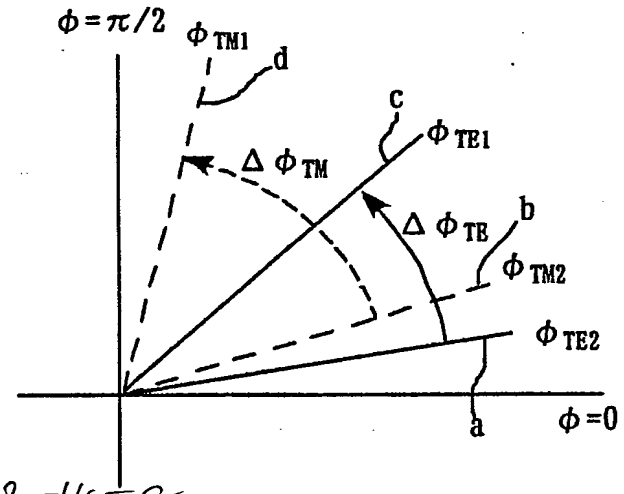

FIG. 2-14-C

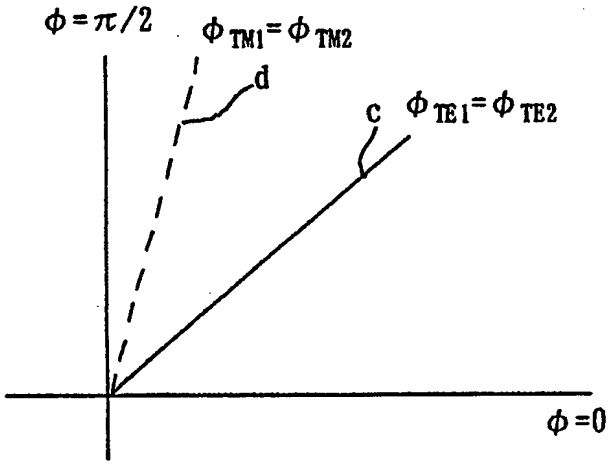

FIG. 2-15-A

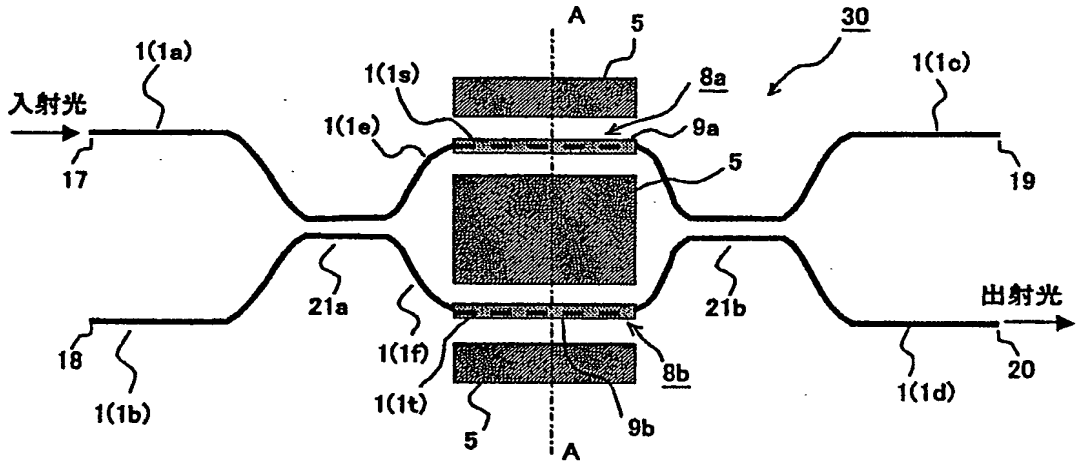

FIG. 2-15-B

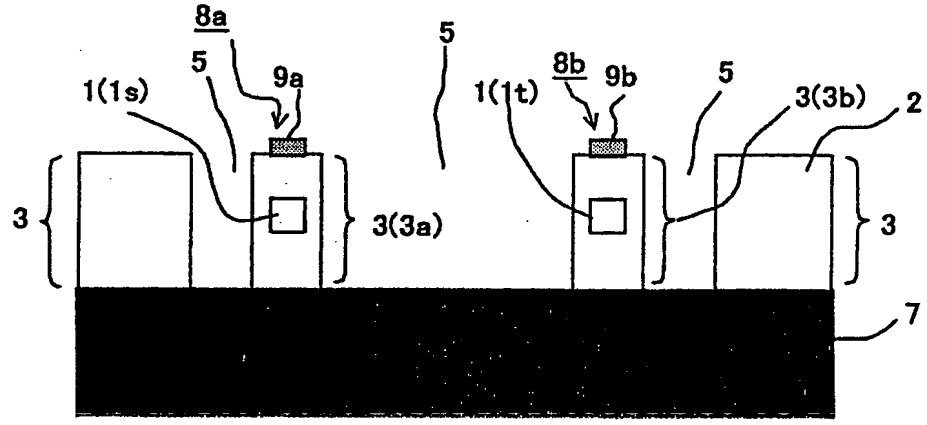

FIG. 2-16-A

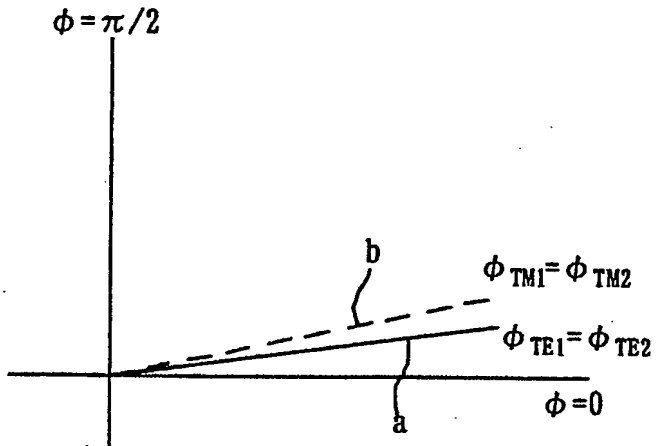

FIG. 2-16-B

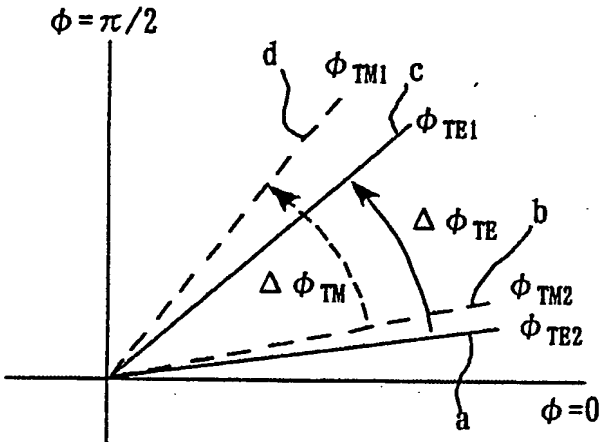
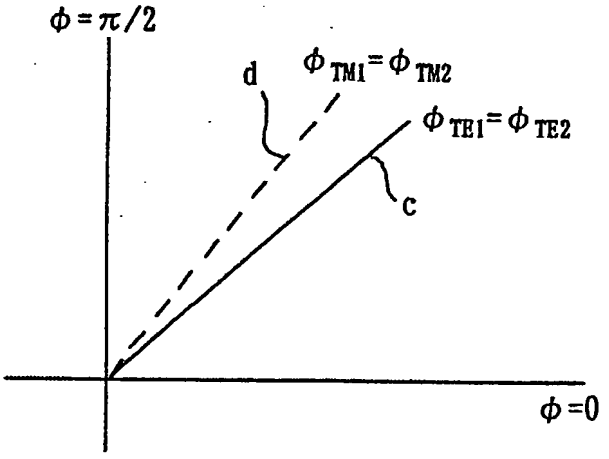
FIG. 2-16-C